

WHAT IS CLAIMED IS:

1. A remote maintenance repeater used in a remote monitoring system, wherein the remote monitoring system includes a plurality of internetwork connectors that respectively connect a network with another network and a monitoring apparatus that monitors and remotely maintains the internetwork connectors, comprising:
 - a command receiving unit that receives a command from the monitoring apparatus;
 - a destination selecting unit that selects a transfer destination device to which the command is to be transferred, wherein the transfer destination device is an internetwork connector or another remote maintenance repeater;
 - a command transmitting unit that transmits the command to the transfer destination device, at a specific frequency specific to the transfer destination device;
- 15 a result receiving unit that receives a result of execution of the command from the transfer destination device at the specific frequency; and a result transmitting unit that transmits the result to the monitoring apparatus.
- 20 2. The remote maintenance repeater according to claim 1, further comprising a substitute radio data relay unit that receives data from a specific internetwork connector by radio and transmits the data to another internetwork connector, upon occurrence of a malfunctioning in a network to which the internetwork connector is connected.

3. A remote maintenance repeater used in a remote monitoring system, wherein the remote monitoring system includes a plurality of internetwork connectors that respectively connect a network with another network and a monitoring apparatus that monitors and remotely maintains the internetwork
5. connectors, comprising:
- a command receiving unit that receives a command from the monitoring apparatus;
 - an information obtaining unit that obtains an identification information for uniquely identifying a transfer destination device comprising an
10. internetwork connector or another remote maintenance repeater, to which the command is transferred;
- a packet generating unit that generates a control packet including the identification information;
 - a radio command transmitting unit that transmits the control packet
15. and the command by radio at a predetermined frequency;
- a radio result receiving unit that receives a result of execution of the command by radio; and
 - a result transmitting unit that transmits the result to the monitoring apparatus.
- 20
4. The remote maintenance repeater according to claim 3, further comprising a substitute radio data relay unit that receives data from a specific internetwork connector by radio and transmits the data to another internetwork connector, upon occurrence of a malfunctioning in a network to which the
25. internetwork connector is connected.

5. An internetwork connector that connects a network with another network, comprising:
 - a radio command receiving unit that receives a command from a remote maintenance repeater by radio at a specific frequency specific to the
 - 5 internetwork connector;
 - a command executing unit that executes the command; and
 - a radio result transmitting unit that transmits a result of execution to the remote maintenance repeater by radio at the specific frequency.
- 10 6. The internetwork connector according to claim 5, further comprising a communication unit that transmits the command to an internetwork connector, which does not have a radio communication function, connected to the same network and receives the result of execution via the network.
- 15 7. The internetwork connector according to claim 6, further comprising:
 - a malfunctioning detecting unit that detects a malfunctioning in a network to which the internetwork connector is connected;
 - a medium switching unit that switches a communication medium from the network to the radio based on the detection of malfunctioning;
- 20 a substitute data receiving unit that receives data from the remote maintenance repeater by radio; and
- a substitute data transmitting unit that transmits the data to the remote maintenance repeater by radio.

8. An internetwork connector that connects a network with another network, comprising:
- a radio command receiving unit that receives a control packet and a command from a remote maintenance repeater by radio at a predetermined frequency;
- a response judging unit that makes a judgment whether it is appropriate to respond to the remote maintenance repeater based on the identification information included in the control packet;
- a responding unit that responds to the remote maintenance repeater based on the judgment;
- a command executing unit that executes the command; and
- a radio result transmitting unit that transmits a result of execution by radio at the predetermined frequency.
- 15 9. The internetwork connector according to claim 8, further comprising a communication unit that transmits the command to an internetwork connector, which does not have a radio communication function, connected to the same network and receives the result of execution via the network.
- 20 10. The internetwork connector according to claim 9, further comprising:
- a malfunctioning detecting unit that detects a malfunctioning in a network to which the internetwork connector is connected;
- a medium switching unit that switches a communication medium from the network to the radio based on the detection of malfunctioning;
- a substitute data receiving unit that receives data from the remote

maintenance repeater by radio; and

a substitute data transmitting unit that transmits the data to the remote maintenance repeater by radio.

5 11. A remote maintenance repeating method for a remote monitoring system, wherein the remote monitoring system includes a plurality of internetwork connectors that respectively connect a network with another network and a monitoring apparatus that monitors and remotely maintains the internetwork connectors, comprising:

10 receiving a command from the monitoring apparatus;
selecting a transfer destination device comprising an internetwork connector or another remote maintenance repeater, to which the command is to be transferred;
transmitting the command to the transfer destination device by radio
15 at a specific frequency specific to the transfer destination device;
receiving a result of execution of the command from the transfer destination device by radio at the specific frequency; and
transmitting the result to the monitoring apparatus.

20 12. A maintenance method for an internetwork connector that connects a network with another network, comprising:

receiving a command from a remote maintenance repeater by radio at a specific frequency specific to the internetwork connector;
executing the command; and
25 transmitting a result of execution to the remote maintenance repeater

by radio at the specific frequency.

13. A computer program that realizes a remote maintenance repeating method for a remote monitoring system on a computer, wherein the remote monitoring system includes a plurality of internetwork connectors that respectively connect a network with another network and a monitoring apparatus that monitors and remotely maintains the internetwork connectors, the computer program making the computer execute:
 - receiving a command from the monitoring apparatus;
 - 10 selecting a transfer destination device comprising an internetwork connector or another remote maintenance repeater, to which the command is to be transferred;
 - transmitting the command to the transfer destination device by radio at a specific frequency specific to the transfer destination device;
 - 15 receiving a result of execution of the command from the transfer destination device by radio at the specific frequency; and
 - transmitting the result to the monitoring apparatus.
14. A computer program that realizes a maintenance method for an internetwork connector that connects a network with another network on a computer, the computer program making the computer execute:
 - receiving a command from a remote maintenance repeater by radio at a specific frequency specific to the internetwork connector;
 - executing the command; and
- 25 transmitting a result of execution to the remote maintenance repeater

by radio at the specific frequency.